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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,332

08/23/2006

Edouard Francois

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EXAMINER

WILLIAMS, JEFFERY A

ART UNIT

PAPER NUMBER

4163

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,332	<b>Applicant(s)</b> FRANCOIS ET AL.	
	<b>Examiner</b> JEFFERY WILLIAMS	<b>Art Unit</b> 4163	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 8/23/2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 2 and 4-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

1. The abstract of the disclosure is objected to because the abstract should be limited to one paragraph. Correction is required. See MPEP § 608.01(b).
2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.

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- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

4. Claims 2,4-9 are objected to under 37 C.F.R. 1.75 because of the following informalities:

In claim 2, "the interpolation filter" is unclear. "The interpolation filter seems to refer the "spatial interpolation filter" taught in claim 1. If this is the case, it is suggested that "spatial" be added to "the interpolation filter".

In claim 4 line 8 "the said spatial resolution" seems to refer back to the resolution chosen for the use of the motion information mentioned in line 6. It is suggested to remove the word "said" to show that the resolution being referenced is that of the source pictures mentioned in lines 8-9.

Claims 5,6,8, and 9 are objected since they depend on claim 4.

In claim 7 line 4, it is unclear what aspect of the interpolation filter is to be chosen (i.e. the complexity, the coefficients, etc.) depending on the decoding scenario used.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "the temporal analysis circuit". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1,3-6 are rejected under 35 U.S.C . 102 (e) as being anticipated by Ye et al. (US2006/00080000).

Regarding claim 1, Ye et al. discloses a decoding method of a picture sequence coded with spatial and temporal scalability (see pg. 1, [006], lines 44-49), the coded data comprising motion information (see pg. 1, [006], lines 44-49), comprising a hierarchical temporal synthesis step carrying out a motion compensated temporal filtering, or MCTF (see pg. 1, [006], lines 44-49) , of pictures at a frequency decomposition level, from the motion information, to provide pictures at a lower decomposition level (see pg. 1, [0012], lines 32-35), wherein, during a motion compensated temporal filtering operation, the resolution chosen for the use of the motion information and the complexity of the spatial interpolation filters used for the motion estimation depend on a decoding scenario (see pg. 2, [0030], lines 64-69 and pg. 3, [0035], lines 10-23 and page 3, [0040], lines 9-22), namely spatial and temporal resolutions and the bit-rate selected for the decoding or else the corresponding temporal decomposition level or a combination of these parameters.

Regarding claim 3, Ye et al. discloses a method according to claim 1, wherein the hierarchical temporal synthesis step is a decoding of wavelet coefficients with motion compensated filtering (see Fig. 1, block 110 and Fig. 5, block 450).

Regarding claim 4, the limitations of claim 4 are rejected in the analysis of claim 1, and claim 4 is rejected on that basis.

For claim 5, Ye et al. discloses a method according to claim 4, comprising a step of motion estimation computed between two pictures at a given level of decomposition to perform the motion compensation the computation accuracy of the motion estimation depending on the temporal decomposition level or the said spatial resolution of the source pictures (see pg. 3, [0037], lines 31-37).

Ye teaches that the size of the group of frames (GOFs) can be determined adaptively per sub band. One with ordinary skill in the art can infer that the motion compensation computation between the pictures within the GOFs will become more or less complex as the size of the GOFs increases or decreases.

Regarding claim 6, the limitations of claim 6 are rejected in the analysis of claim 3, and claim 6 is rejected on that basis.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2, 7, and 9 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Ye et al. (US 2006/00080000) in view of Hallapuro et al. (US 7,349,473).

Regarding claim 2, Ye et al. 39 discloses a method according to claim 1, containing all the limitations which are the basis for the rejection of claim 1 above.

Ye et. al., however, does not disclose a method wherein the number of coefficients of the interpolation filter used for the motion compensation depends on the decoding scenario or the temporal decomposition level. Hallapuro et al. from the same or similar fields of endeavor teaches a method wherein the number of coefficients of the interpolation filter used for the motion compensation depends on the decoding scenario or the temporal decomposition level. Hallapuro states “The interpolation filter for use in conjunction with a multi-picture type is shorter or having fewer coefficients than the interpolation filter for use in conjunction with a single-picture type. As such, the complexity of the interpolation filter for the multi-picture type can be reduced. Furthermore, the interpolation filter may be changed based on the characteristics of the block, the size and/or the shape of the block” (see abstract and column 12, lines 11-20). Thus it would have been obvious to a person of ordinary skill in the art at the time of the invention to add selection of interpolation coefficients based on characteristics of the block, disclosed by Hallapuro et al., to the present invention disclosed by Ye et al., the motivation being, enhanced interpolation of the encoded data.

Regarding claim 7, Ye et al, teaches a decoder for the implementation of the method according to claim 1 as outlined in the rejection for claim 1.



Ye et al. does not teach a motion configuration choice circuit to determine the motion resolution and the interpolation filter to use in the motion compensation for the motion compensated filtering, depending on the decoding scenario, namely the spatial and temporal resolutions and the bit-rate selected for the decoding or the corresponding temporal decomposition level or a combination of these parameters. Hallapuro et al. teaches an interpolation filter selection block for selecting the interpolation filter to be used based on the decoding scenario (see Fig. 6, blocks 640 and 650, Fig. 7, block 750, and Fig. 8, block 840 and column 11, lines 57-62). Thus it would have been obvious to a person of ordinary skill in the art at the time of the invention to add a motion configuration choice circuit (filter selection choice box), disclosed by Hallapuro et al., to the present invention disclosed by Ye et al. to determine the motion resolution and the interpolation filter to use in the motion compensation for the motion compensated filtering depending on the said spatial resolution of the source pictures or the corresponding temporal decomposition, the motivation being, to provide limited accuracy of motion and simple interpolation filters when one operates with limited picture qualities, that is a low bit-rate, on pictures of a small size and at a high temporal decomposition and the converse for pictures of higher quality, with higher bit-rates and lower temporal decomposition levels.

Regarding claim 9, Ye et al. teaches a step of determining the accuracy of the motion computed by the motion estimation circuit depending on the said spatial resolution of the source pictures or the corresponding temporal decomposition, as outlined in the rejection for claim 5 above.

Ye et al. does not disclose a motion configuration choice circuit to perform the aforementioned step. Hallapuro et al. teaches a interpolation filter selection block for selecting the interpolation filter to be used based on the decoding scenario (see Fig. 6, blocks 640 and 650, Fig. 7, block 750, and Fig. 8, block 840 and column 11, lines 57-62). Thus it would have been obvious to a person of ordinary skill in the art at the time of the invention to add a motion configuration choice circuit to determine the accuracy of the motion computed by the motion estimation circuit depending on the spatial resolution of the source pictures or the corresponding temporal decomposition, disclosed by Hallapuro et al., to the present invention disclosed by Ye et al., the motivation being, to provide limited accuracy of motion when one operates with limited picture qualities, that is a low bit-rate, on pictures of a small size and at a high temporal decomposition and the converse for pictures of higher quality , with higher bit-rates and lower temporal decomposition levels.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFERY WILLIAMS whose telephone number is (571)270-7579. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on (571)272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JEFFERY WILLIAMS/  
Examiner, Art Unit 4163

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